

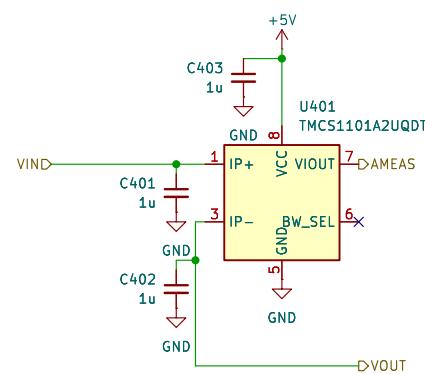
1 2 3 4 5 6

A

B

C

D



Sheet: /solar/AMEAS\_1/  
File: Current\_Measure.kicad\_sch

**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.4

**Rev:**  
Id: 4/21

1 2 3 4 5 6

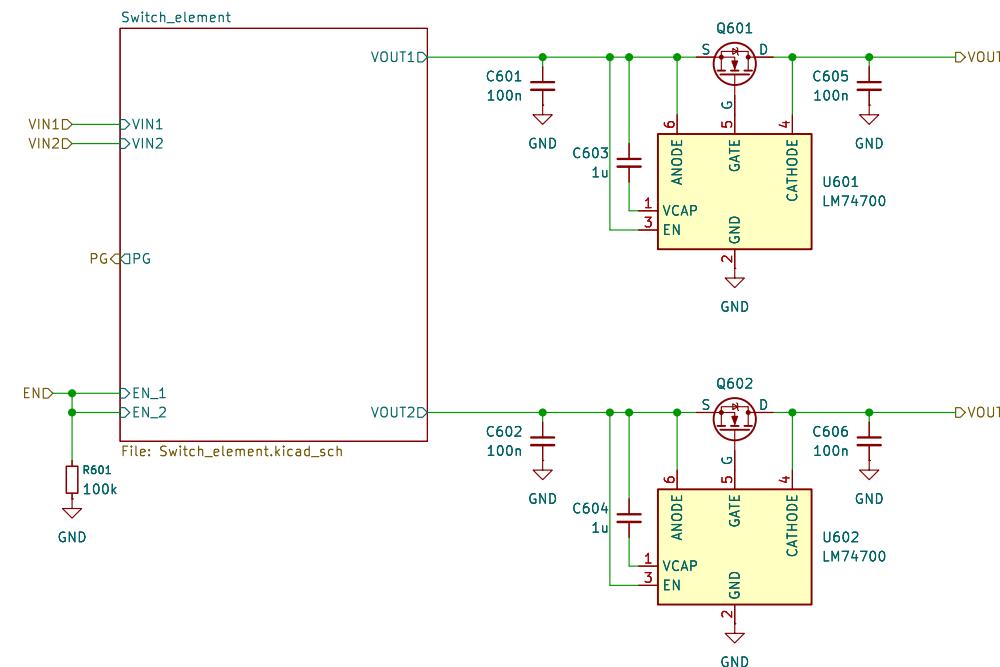
1 2 3 4 5 6

Inputs	Outputs
Input voltage	Output voltage
Input from CPU	

dedikovaný ideal diode IC

A

Generic Switch  
soft current limit – software  
hard current limit – Resistor  
kalibrace ADC merení proudu  
hot/cold redundancy  
hot – 1 enable automatic  
cold – 2 enables manual



Sheet: /solar/Switch\_SOL\_1/  
File: Switch\_H.kicad\_sch

Title:

Size: A4 Date:  
KiCad E.D.A. 9.0.4

Rev:  
Id: 6/21

B

A

B

C

C

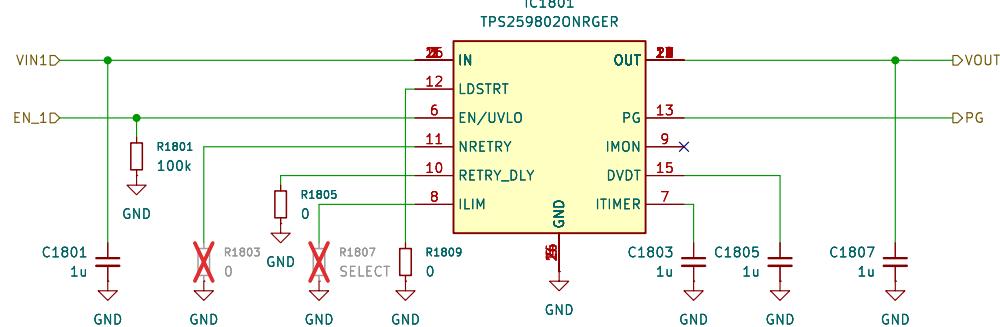
D

D

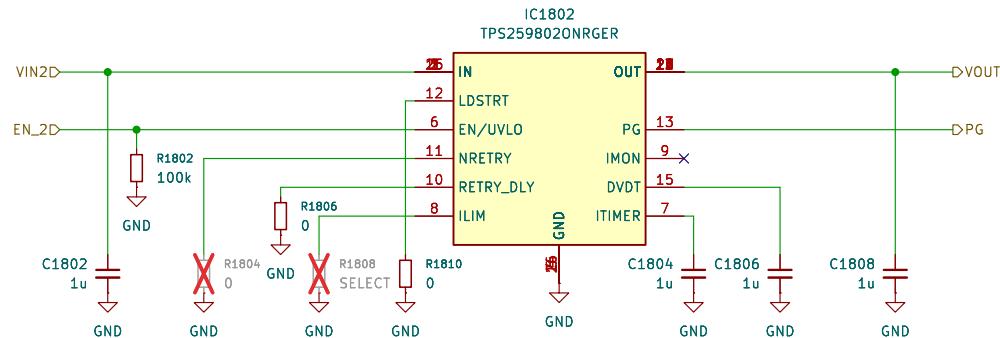
1 2 3 4 5 6

A

Candidates
6A TPS281C30ERGWR
TPS25910RSAR
TPS1H200A-Q1 – too much Ron
TPS259802
10A TPS1685
TPS25983
LTC4226
TPS25983



B



C

D

Sheet: /solar/Switch\_SOL\_1/Switch\_element/  
File: Switch\_element.kicad\_sch

**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.4

**Rev:**  
Id: 16/21

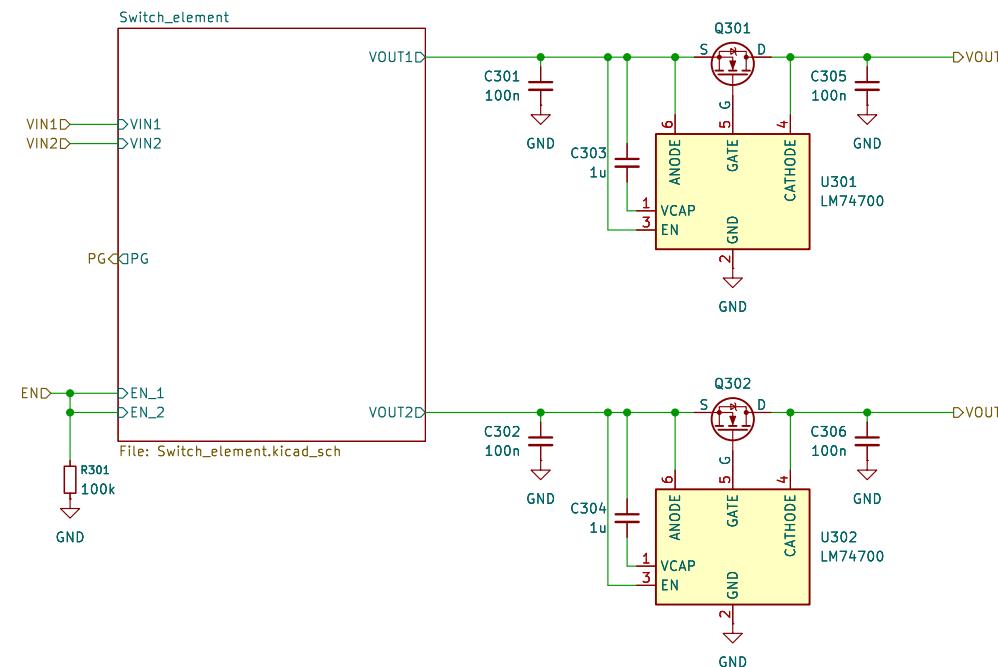
Inputs	Outputs
Input voltage	Output voltage
Input from CPU	

dedikovaný ideal diode IC

A



B



C

D

Sheet: /switch1/  
File: Switch\_H.kicad\_sch

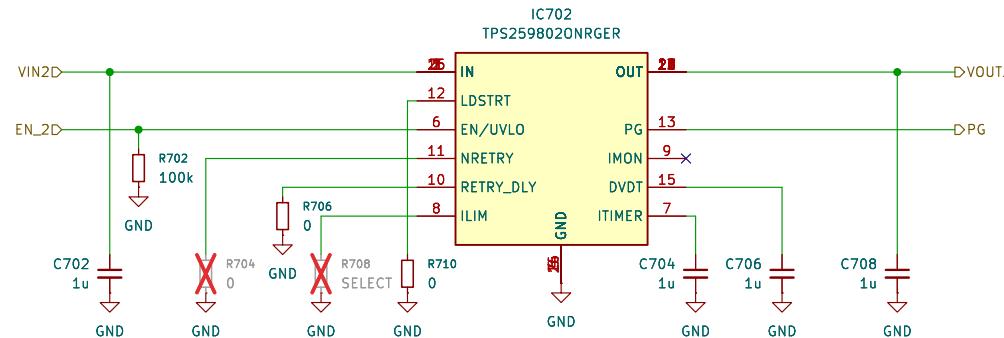
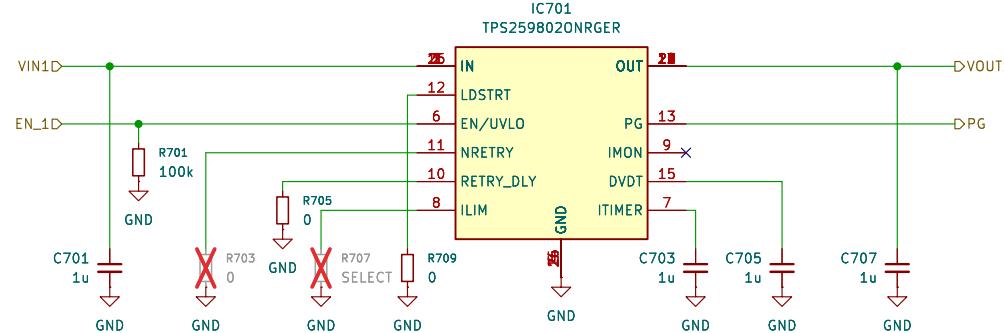
**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.4

Rev:  
Id: 3/21

A

Candidates
6A TPS281C30ERGWR
TPS25910RSAR
TPS1H200A-Q1 – too much Ron
TPS259802
10A TPS1685
TPS25983
LTC4226
TPS25983



Sheet: /switch1/Switch\_element/  
File: Switch\_element.kicad\_sch

**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.4

**Rev:**  
Id: 7/21

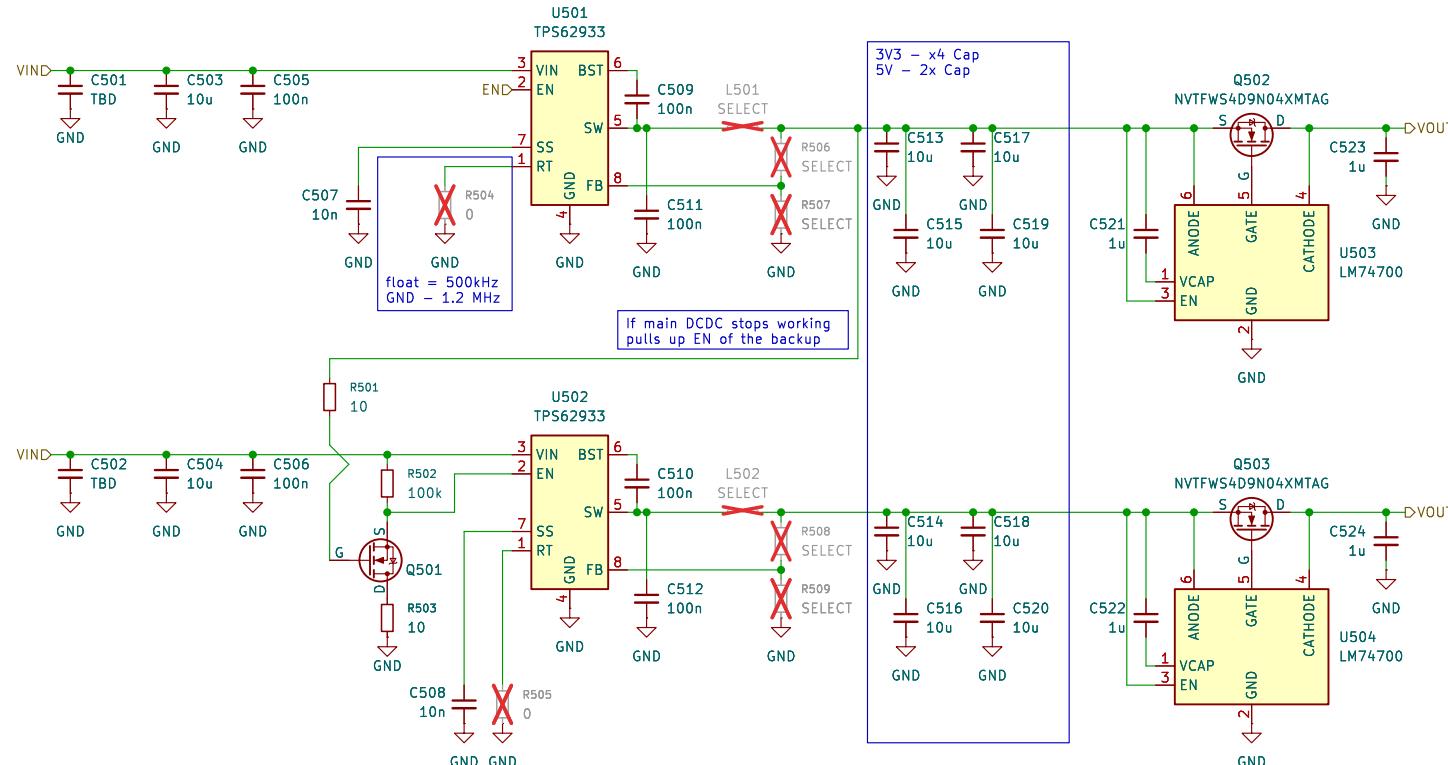
Inputs	Outputs
BUS Voltage	5V

**2A**

$$I_{CIN\_RMS} = I_{OUT} \times \sqrt{\frac{V_{IN\_MIN} - V_{OUT}}{V_{IN\_MIN}}} \times \frac{V_{IN\_MIN} - V_{OUT}}{V_{IN\_MIN}}$$

Use Rxx03 and Rxx00 to select output voltage

Output voltage  
5V  
10000\*(5V-0.8)/0.8 => Rxx03,Rxx00 =  
52500



Sheet: /dcdc1/  
File: DCDC\_ADJUSTABLE.kicad\_sch

**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.4

Rev:  
Id: 5/21

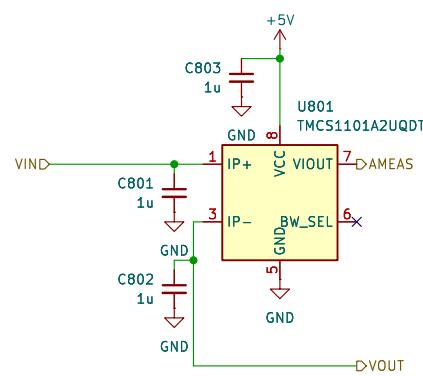
1 2 3 4 5 6

A

B

C

D



Sheet: /ameas1/  
File: Current\_Measure.kicad\_sch

**Title:**

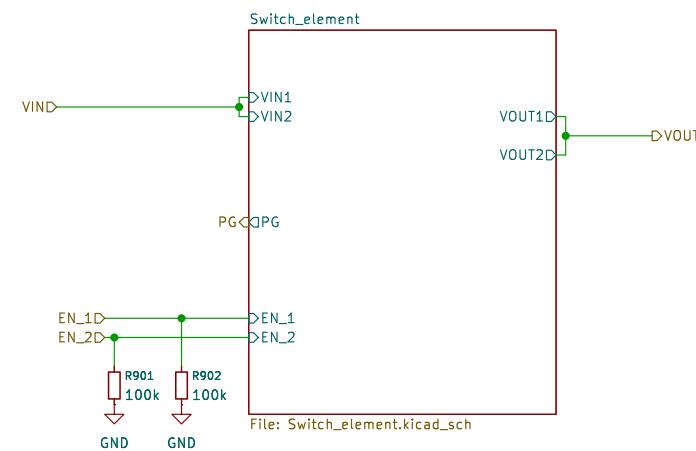
Size: A4 | Date:  
KiCad E.D.A. 9.0.4

**Rev:**  
Id: 8/21

1 2 3 4 5 6

<b>Inputs</b>	<b>Outputs</b>
Input voltage	Output voltage
Input from CPU	

Generic Switch  
soft current limit – software  
hard current limit – Resistor  
kalibrace ADC merení proudu  
hot/cold redundancy  
hot – 1 enable automatic  
cold – 2 enables manual



Sheet: /switch\_c1/  
File: Switch\_C.kicad\_sch

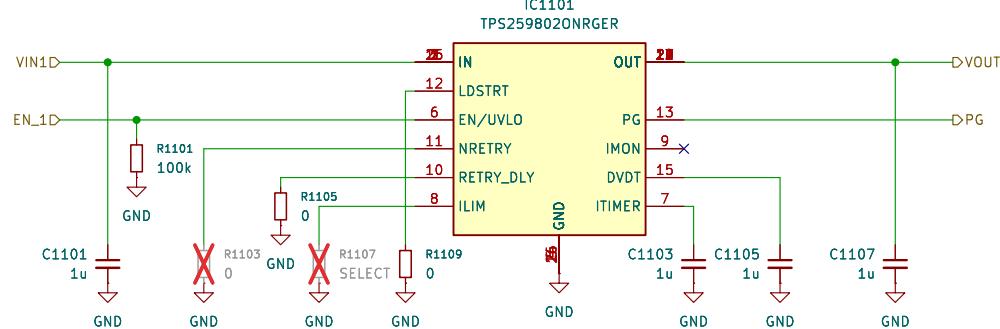
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KiCad E.D.A. 9.0.4

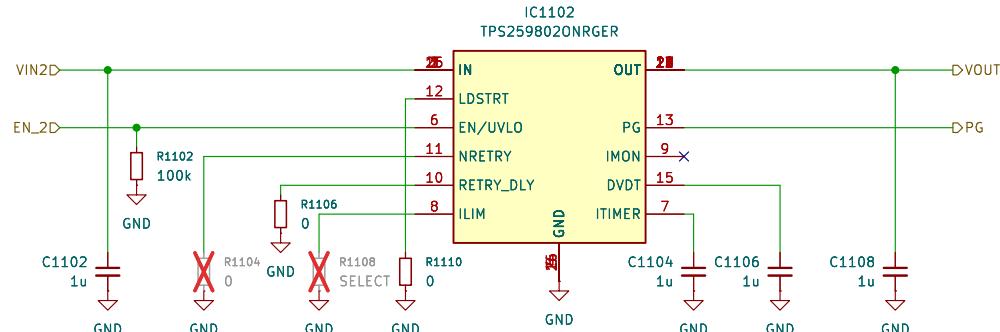
Rev:  
Id: 9/21

A

Candidates
6A TPS281C30ERGWR
TPS25910RSAR
TPS1H200A-Q1 – too much Ron
TPS259802
10A TPS1685
TPS25983
LTC4226
TPS25983



B



C

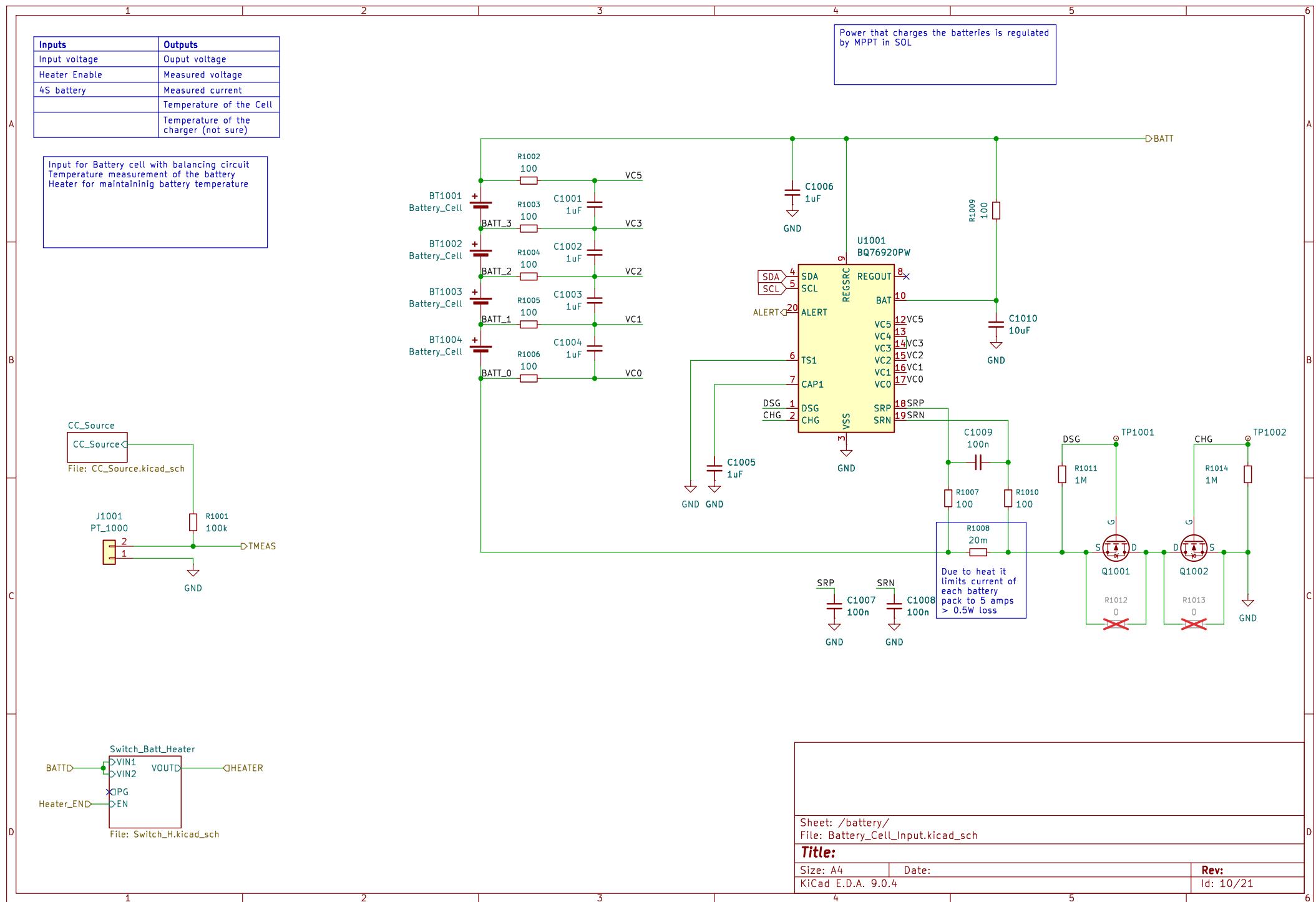
D

Sheet: /switch\_c1/Switch\_element/  
File: Switch\_element.kicad\_sch

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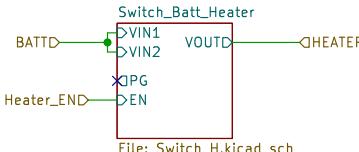
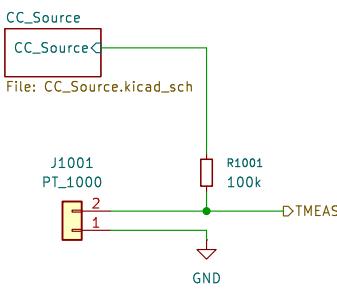
Size: A4 | Date:  
KiCad E.D.A. 9.0.4

**Rev:**  
Id: 11/21



Inputs	Outputs
Input voltage	Output voltage
Heater Enable	Measured voltage
4S battery	Measured current
	Temperature of the Cell
	Temperature of the charger (not sure)

Input for Battery cell with balancing circuit  
Temperature measurement of the battery  
Heater for maintaining battery temperature



A

A

B

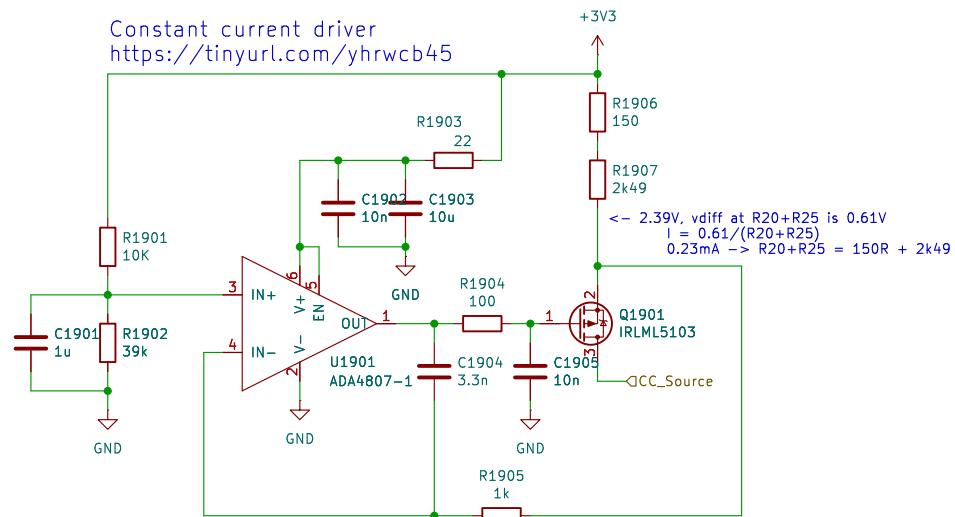
B

C

C

D

D



Sheet: /battery/CC\_Source/  
 File: CC\_Source.kicad\_sch

**Title:**

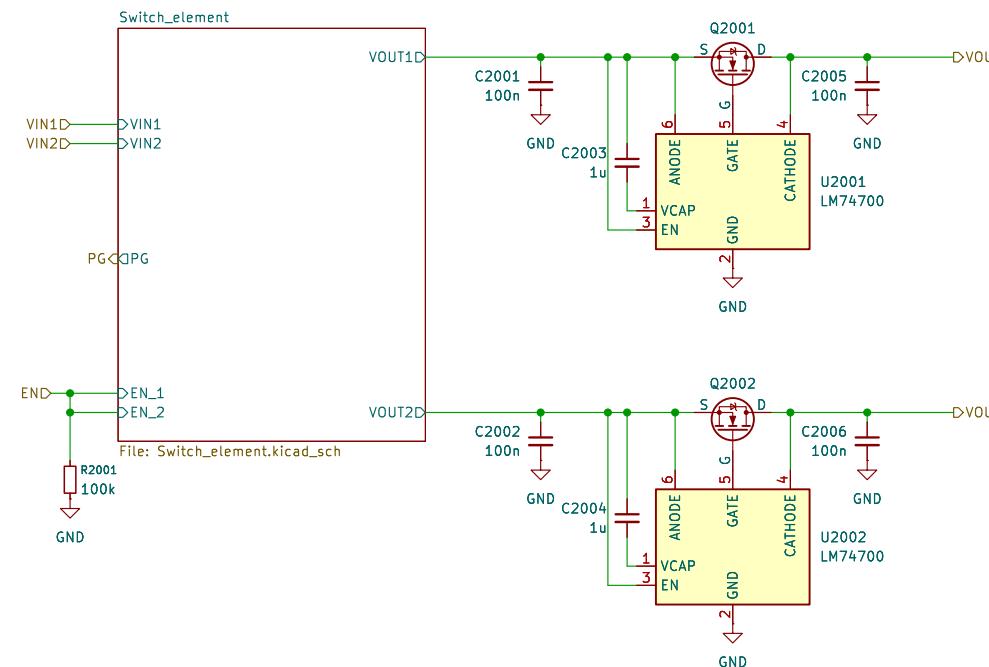
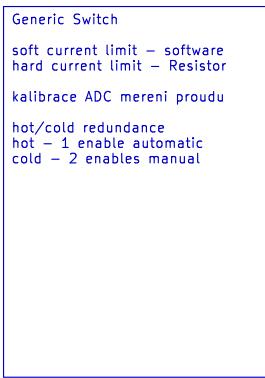
Size: A4 | Date:  
 KiCad E.D.A. 9.0.4

Rev:  
 Id: 17/21

Inputs	Outputs
Input voltage	Output voltage
Input from CPU	

dedikovaný ideal diode IC

A



Sheet: /battery/Switch\_Batt\_Heater/  
File: Switch\_H.kicad\_sch

**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.4

Rev:  
Id: 18/21

A

A

B

B

C

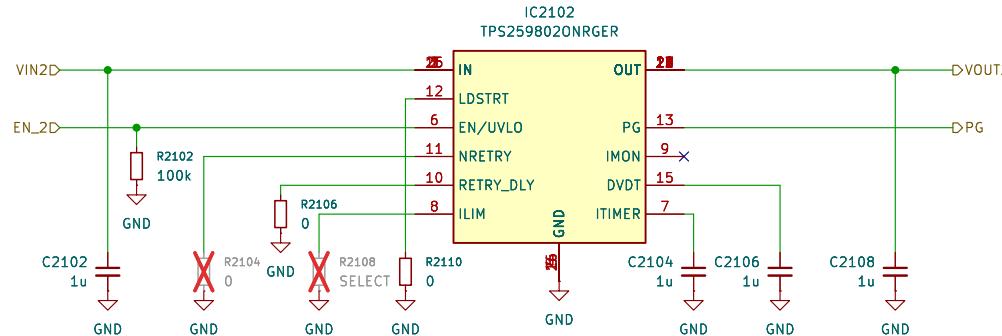
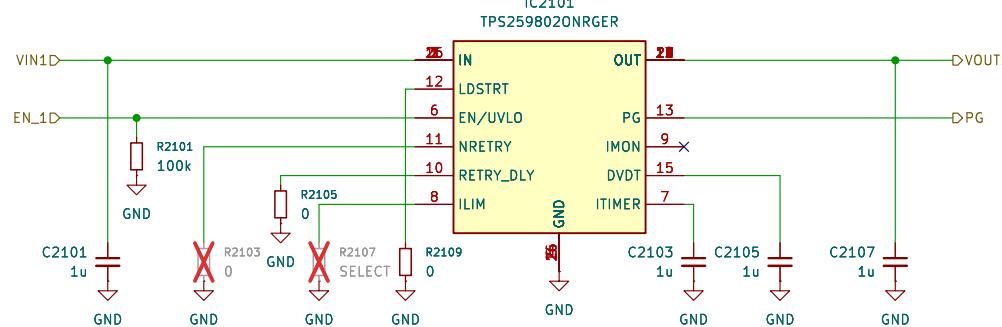
C

D

D

A

Candidates
6A TPS281C30ERGWR
TPS25910RSAR
TPS1H200A-Q1 – too much Ron
TPS259802
10A TPS1685
TPS25983
LTC4226
TPS25983



Sheet: /battery/Switch\_Batt\_Heater/Switch\_element/  
 File: Switch\_element.kicad\_sch

**Title:**

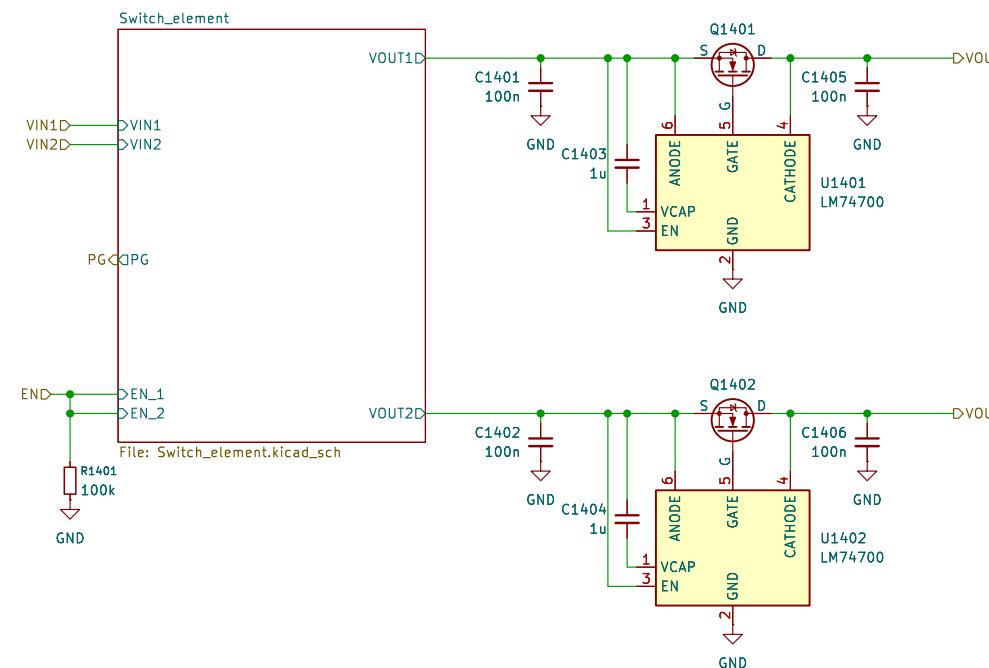
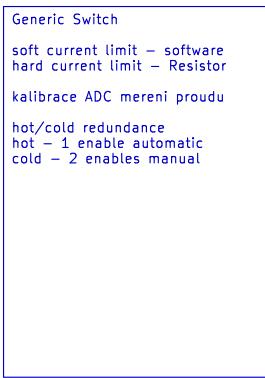
Size: A4 | Date:  
 KiCad E.D.A. 9.0.4

**Rev:**  
 Id: 19/21

Inputs	Outputs
Input voltage	Output voltage
Input from CPU	

dedikovaný ideal diode IC

A



Sheet: /switch/  
File: Switch\_H.kicad\_sch

**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.4

Rev:  
Id: 14/21

B

A

C

B

C

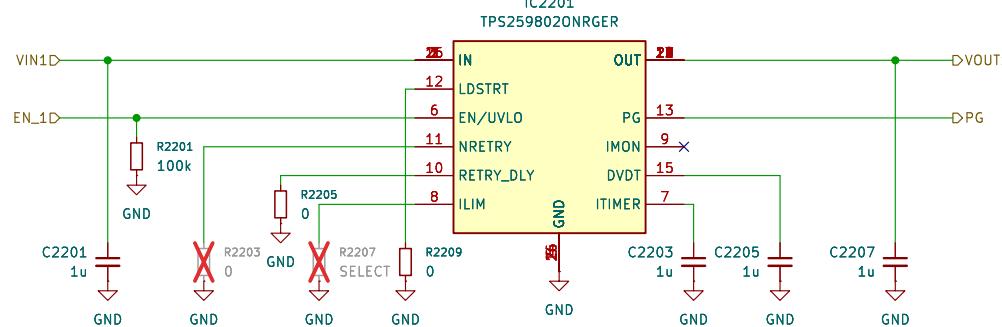
C

D

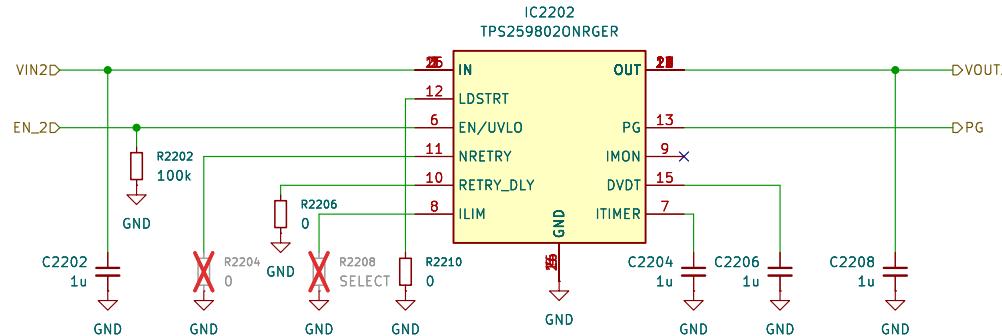
D

A

Candidates
6A TPS281C30ERGWR
TPS25910RSAR
TPS1H200A-Q1 – too much Ron
TPS259802
10A TPS1685
TPS25983
LTC4226
TPS25983



B



C

D

Sheet: /switch/Switch\_element/  
 File: Switch\_element.kicad\_sch

**Title:**

Size: A4 | Date:  
 KiCad E.D.A. 9.0.4

**Rev:**  
 Id: 20/21

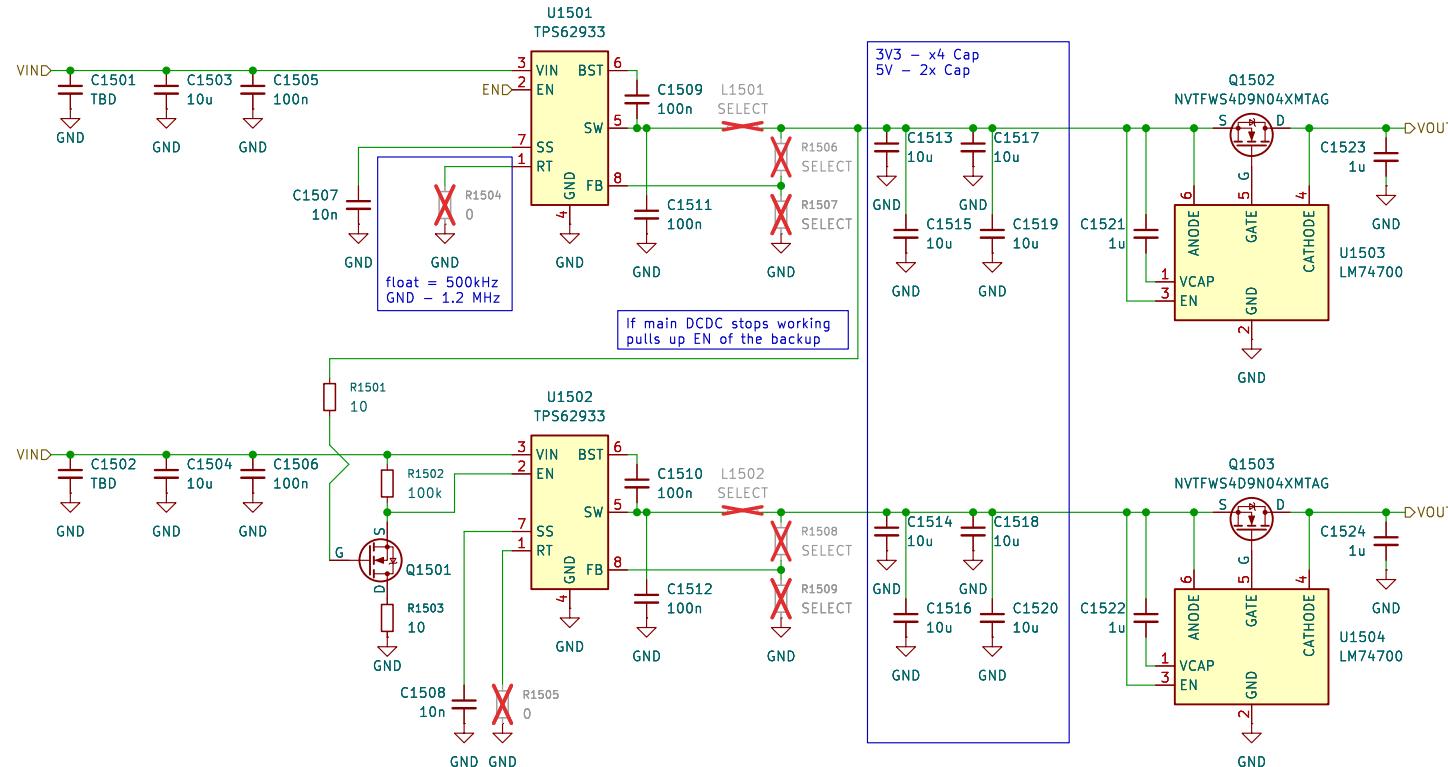
Inputs	Outputs
BUS Voltage	5V

**2A**

$$I_{CIN\_RMS} = I_{OUT} \times \sqrt{\frac{V_{OUT}}{V_{IN\_MIN}}} \times \frac{V_{IN\_MIN} - V_{OUT}}{V_{IN\_MIN}}$$

Use Rxx03 and Rxx00 to select output voltage

Output voltage  
5V  
10000\*(5V-0.8)/0.8 => Rxx03,Rxx00 =  
52500



Sheet: /dcdc/  
File: DCDC\_ADJUSTABLE.kicad\_sch

**Title:**

Size: A4 Date:  
KiCad E.D.A. 9.0.4

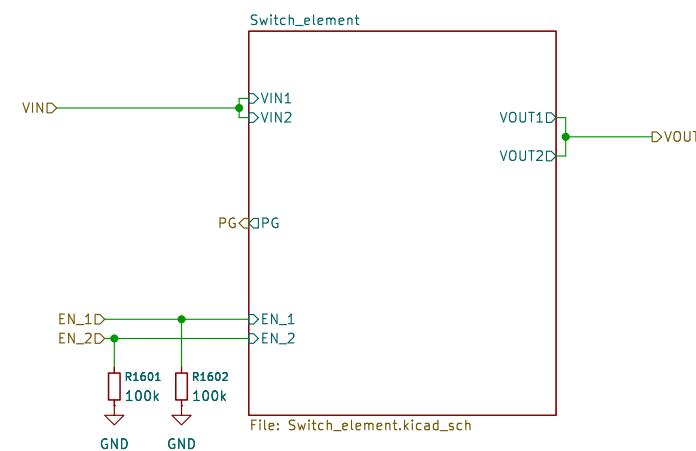
Rev:  
Id: 16/21

A

Inputs	Outputs
Input voltage	Output voltage
Input from CPU	

A

Generic Switch  
soft current limit – software  
hard current limit – Resistor  
kalibrace ADC mereni proudu  
hot/cold redundancy  
hot – 1 enable automatic  
cold – 2 enables manual



B

B

C

C

D

D

Sheet: /switch\_c/  
File: Switch\_C.kicad\_sch

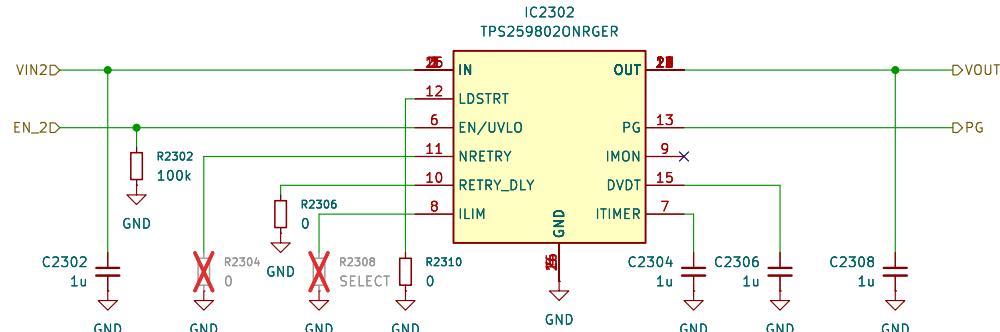
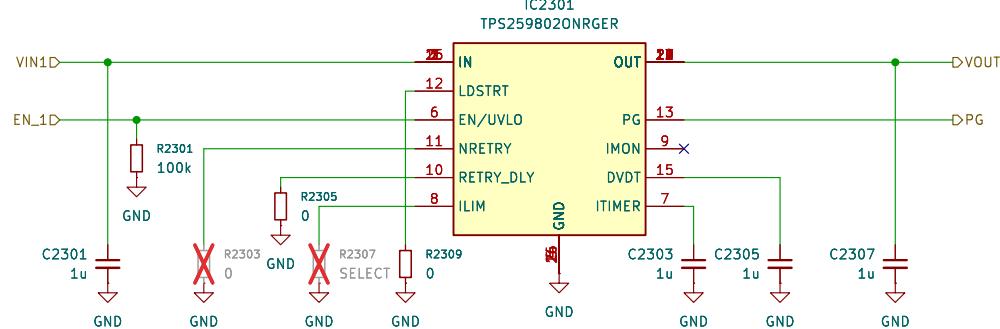
**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.4

**Rev:**  
Id: 17/21

A

Candidates
6A TPS281C30ERGWR
TPS25910RSAR
TPS1H200A-Q1 – too much Ron
TPS259802
10A TPS1685
TPS25983
LTC4226
TPS25983



Sheet: /switch\_c/Switch\_element/  
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KiCad E.D.A. 9.0.4

**Rev:**  
Id: 21/21

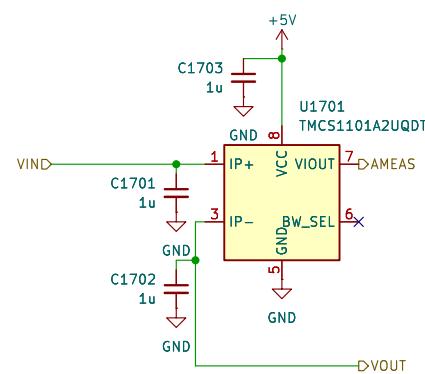
1 2 3 4 5 6

A

B

C

D



Sheet: /ameas/  
File: Current\_Measure.kicad\_sch

**Title:**

Size: A4 | Date:  
KiCad E.D.A. 9.0.4

**Rev:**  
Id: 19/21

1 2 3 4 5 6